

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

27 May 2026

### Comparisons between fractional laser, microneedling and combination therapy of microneedling and topical platelet-rich plasma (PRP) in atrophic acne scars treatment

#### Protocol summary

##### Summary

The aim of this study is to determine the effectiveness of microneedling for treatment of atrophic acne scars as a new method of treatment. The study is a single blind randomized clinical trial (RCT) that will be performed on 3 groups of 30 patients. Inclusion criteria : Atrophic acne scars; Ages 20 to 50 years old. Exclusion criteria: Active acne; Patients with platelet dysfunction, severe thrombocytopenia; Hemodynamic instability or chronic blood disorder; Inflammatory skin disorder, local or herpes infection active in the procedure site; Taking an anticoagulant or NSAID within 48 hours ago. The first group will be treated by 4 times Fractional CO2 laser 3 weeks apart and the second group will be treated by 4 times microneedling 3 weeks apart and the third group will be treated by 4 times microneedling and topical PRP 3 weeks apart. We will evaluate all of the patients for qualitative and quantitative healing assessments of scars with visioface device on admission and at each treatment session and 3 months after the last session. In addition, changes in the amount and intensity of scars based on Goodman and Baron qualitative scar grading system will be evaluated a blinded specialist. At each visit, patient will be asked about the healing of acne scars based on the Visual analog scale (VAS, 0-10 point scale).

#### General information

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT2015110318210N6**

Registration date: **2015-11-14, 1394/08/23**

Registration timing: **registered\_while\_recruiting**

Last update:

Update count: **0**

##### Registration date

2015-11-14, 1394/08/23

##### Registrant information

###### Name

Elham Behrangi

###### Name of organization / entity

Iran University of Medical Sciences

###### Country

Iran (Islamic Republic of)

###### Phone

+98 21 6650 2040

###### Email address

behrangi.e@iums.ac.ir

##### Recruitment status

###### Recruitment complete

##### Funding source

Iran University of Medical Sciences

##### Expected recruitment start date

2015-10-22, 1394/07/30

##### Expected recruitment end date

2016-10-21, 1395/07/30

##### Actual recruitment start date

empty

##### Actual recruitment end date

empty

##### Trial completion date

empty

##### Scientific title

Comparisons between fractional laser, microneedling and combination therapy of microneedling and topical platelet-rich plasma (PRP) in atrophic acne scars treatment

##### Public title

The efficacy of microneedling in treatment of acne scars

##### Purpose

Treatment

### **Inclusion/Exclusion criteria**

Inclusion criteria: Patient with atrophic acne scars; Ages 20 to 50 years old Exclusion criteria: Active acne; Patients with platelet dysfunction, severe thrombocytopenia (less than 50,000); Any hemodynamic instability or chronic diseases (such as diabetes, chronic infections, blood dyscrasia ); Local inflammatory skin disorder or active herpes infection at the site of the procedure; Taking an anticoagulant or NSAID within 48 hours before the procedure; Corticosteroid injection at the treatment site during 1 month; Use of systemic corticosteroids within 2 weeks; Fever or recent illness; Cancer, particularly bone or blood; Hemoglobin level less than 10 grams per deciliter

### **Age**

From **20 years** old to **50 years** old

### **Gender**

Both

### **Phase**

N/A

### **Groups that have been masked**

*No information*

### **Sample size**

Target sample size: **90**

### **Randomization (investigator's opinion)**

Randomized

### **Randomization description**

### **Blinding (investigator's opinion)**

Single blinded

### **Blinding description**

### **Placebo**

Not used

### **Assignment**

Parallel

### **Other design features**

## **Secondary Ids**

empty

## **Ethics committees**

### 1

#### **Ethics committee**

##### **Name of ethics committee**

Iran University of Medical Sciences

##### **Street address**

Tehran, Hemmat Highway

##### **City**

Tehran

##### **Postal code**

#### **Approval date**

2015-09-19, 1394/06/28

#### **Ethics committee reference number**

IR.IUMS.REC.1394.26556

## **Health conditions studied**

### 1

#### **Description of health condition studied**

acne

#### **ICD-10 code**

L70.0

#### **ICD-10 code description**

Acne vulgaris

### 2

#### **Description of health condition studied**

Atrophic scar

#### **ICD-10 code**

L90.5

#### **ICD-10 code description**

Scar conditions and fibrosis of skin

## **Primary outcomes**

### 1

#### **Description**

Response to treatment

#### **Timepoint**

Three weeks after each session and 3 months after the last session

#### **Method of measurement**

By a physician, according to the measure of the severity of acne scar goodman and high quality photography by visioface device

### 2

#### **Description**

Patient satisfaction rate of response to treatment

#### **Timepoint**

Three weeks after each session and 3 months after the last session

#### **Method of measurement**

Questionnaire(percentage)

## **Secondary outcomes**

empty

## **Intervention groups**

### 1

#### **Description**

Microneedeling, 4 times, 3 weeks apart

#### **Category**

Treatment - Other

### 2

#### **Description**

Microneedeling and topical platelet-rich plasma (PRP) , 4 times, 3 weeks apart

#### **Category**

Treatment - Other

### 3

#### Description

Co2 fractional laser, 4 times, 3 weeks apart

#### Category

Treatment - Other

### Recruitment centers

#### 1

##### Recruitment center

###### Name of recruitment center

Rasul Akram Hospital

###### Full name of responsible person

Fateme Zahra Mohammadi M.D.

###### Street address

Niyayesh Street, Satarkhan Street

###### City

Tehran

### Sponsors / Funding sources

#### 1

##### Sponsor

###### Name of organization / entity

Research DepartmentIran of Univercity of Medical Science

###### Full name of responsible person

Seyyed ali javad musavi M.D.

###### Street address

Hemmat Highway

###### City

Tehran

##### Grant name

##### Grant code / Reference number

##### Is the source of funding the same sponsor organization/entity?

Yes

##### Title of funding source

Research DepartmentIran of Univercity of Medical Science

##### Proportion provided by this source

100

##### Public or private sector

*empty*

##### Domestic or foreign origin

*empty*

##### Category of foreign source of funding

*empty*

##### Country of origin

##### Type of organization providing the funding

*empty*

### Person responsible for general inquiries

#### Contact

##### Name of organization / entity

Rasul Akram Hospital

##### Full name of responsible person

Fatemeh Zahra Mohammadi

#### Position

resident

#### Other areas of specialty/work

#### Street address

Niyayesh street, sattarkhan street

#### City

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### Person responsible for scientific inquiries

#### Contact

##### Name of organization / entity

Iran University of Medical Sciences

##### Full name of responsible person

Elham Behrangi M.D.

##### Position

Assistant Professor of Dermatology

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### Person responsible for updating data

#### Contact

##### Name of organization / entity

Rasul Akram Hospital

##### Full name of responsible person

Fateme Zahra Mohammadi

##### Position

Resident

##### Other areas of specialty/work

##### Street address

Niyayesh Street, Sattarkhan Street

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##### Fax

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##### Web page address

## **Sharing plan**

**Deidentified Individual Participant Data Set (IPD)**

*empty*

**Study Protocol**

*empty*

**Statistical Analysis Plan**

*empty*

**Informed Consent Form**

*empty*

**Clinical Study Report**

*empty*

**Analytic Code**

*empty*

**Data Dictionary**

*empty*